REMARKS

This responds to the Office Action mailed on January 12, 2006. Reconsideration is respectfully requested.

Claims 1 – 4 and 6 – 28 are amended, no claims are canceled, and no claims are added; as a result, claims 1 – 28 remain pending in this application.

§112 Rejection of the Claims

Claims 6, 7, 18 and 19 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 6 and 18 have been amended to remove the phrase "the access channel having a bandwidth exceeding the speech encoding rate". Accordingly, Applicant submits that the rejection of claims 6, 7, 18 and 19 has been overcome.

§103 Rejection of the Claims

Claims 1 and 8-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Rabenko (U.S. 2005/0031097) in view of Ota (U.S. 6,661,846) and further in view of Fallon (U.S. 2004/0042506). Claims 2, 3 and 5 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Rabenko in view of Ota and Fallon, and further in view of Auld (U.S. 5,398,072). Claim 4 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Rabenko in view of Ota and Fallon, and further in view of Jacobs (U.S. 6,594,628). Claims 6 and 7 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Rabenko in view of Ota and Fallon, and further in view of Hippelainen (U.S. 6,229,802).

Applicant's claim 1 is directed to a method of receiving packet-switched voice communications over a non-dedicated wireless communication channel that uses a channel allocation/reallocation process. As recited in claim 1, an initial portion of speech packets are received at a transmission rate exceeding a speech encoding rate. The speech packets are decoded at a rate exceeding the speech encoding rate. Speech signals are generated from the

decoded speech packets at a varying rate. As recited in claim 1, the speech signals are representative of the initial portion of speech packets and have a shortened time period which at least in part compensates for a channel reallocation delay. As further recited in claim 1, the speech signals are initially generated at a rate exceeding the speech encoding rate, and then the rate is decreased to approximately the speech encoding rate.

Applicant submits that none of the cited art, either separately or in combination, teaches, suggests, or motivates varying a rate at which ***speech signals*** are generated. Speech signals correspond to the actual audio signals that can be heard by a person listening.

Applicant's claim 3, for example, as amended, recites that the varying rate is gradually decreased to approximately the speech encoding rate.

Applicant's claim 4, for example, as amended, recites that a dynamic time warping process compensates for an increased pitch resulting from initially generating the speech signals at the rate exceeding the speech encoding rate.

Applicant's claim 9, for example, as amended, recites that the speech signals correspond to actual audio signals that are to be heard by a person listening.

Discussion on Auld

Auld has been cited by the Examiner in the rejection of claims 2, 3 and 5 for decreasing the processing rate to the speech encoding rate (see Office action page 6). Applicant respectfully disagrees with this interpretation of Auld. Auld adjusts the processing rate of a *video decoder* to prevent overflow or underflow of a buffer (See Auld column 4, lines 46-50). In Applicant's claim 1, for example, the decoding is not varied. The rate of generating of speech signals from previously decoded speech packets is varied. In other words, ***speech signals*** are generated at a varying rate from the decoded speech packets.

Note, that Applicant's claims are directed to generating speech signals, not data or packets, at varied rate.

Discussion on Fallon

Fallon has been cited by the Examiner for processing decoded speech packets to generate speech signals with a shortened time period which at least in part compensates for a channel

reallocation delay." Applicant submits that Fallon is simply referring to decompression of data faster than in real-time (see Fallon paragraph 0047). In Applicant's claim 1, speech packets may be decoded at a rate that is faster than real-time. This decoding of speech packets is a separate element that is distinguishable from the generation of speech signals. However, Applicant's claim 1 recites that speech signals are generated at a varying rate which initially exceeds the speech encoding rate. The rate is then decreased to the speech encoding rate. This transition from a higher to a lower rate allows speech signals to be provided over a shorter time period to compensate for a channel reallocation delay. There is no teaching, suggestion, or motivation in Fallon to decrease the rate at which speech signals are generated during their generation. Fallon does not generate speech signals, and furthermore, there is no channel reallocation delay to compensate for in Fallon because Fallon does not care about the transmission of voice data. In Fallon, it does not matter how fast data is decompressed because no person would be listening to the decompressed data.

Although Fallon states that it is applicable to all forms of data communication (see Fallon paragraph 0034), the decompression of data faster than real-time is not applicable to generating speech signals at a varying rate to compensate for a channel access delay. Fallon compresses data for transmission and then decompresses the data. Fallon achieves an acceleration of data when the total time for compression, transmission and decompression is less than the total time for transmitting the data in decompressed form (see Fallon paragraph 0047). Applicant submits that this teaching in Fallon is not applicable to generating speech signals at a varying rate, which is done ***after*** speech packets have been transmitted, received and decoded. Because Fallon's teachings are not applicable to generating speech signals, Applicant submits that there is no motivation to combine Fallon with one or more other references to result in Applicant's claimed invention.

Discussion on Ota

Ota has been cited by the Examiner for disclosing "decoding speech packets at a rate exceeding the speech encoding rate". Applicant respectfully disagrees with this interpretation of Ota and submits that Ota is concerned with a digital display device, not voice communications,

speech packets or speech signals. Applicant further submits that Ota ***teaches away*** from elements of Applicant's claim 1, as discussed below.

In Ota, the digital display device has an input bit-stream buffer. Data is provided to the buffer by an encoder. The buffered data is then decoded for displaying. Ota states that errors occur when the encoding rate and the decoding rate differ. For example, if the decoder rate is faster than the encoder rate, less than the entire bit-stream will be decoded causing bit-stream buffer underflow. This causes the picture to freeze (see Ota column 6, lines 27 – 40). Accordingly, Ota teaches that differing encoding and decoding rates are undesirable. This ***teaches away*** from Applicant's claim which recites that speech packets are decoded at a rate exceeding the speech encoding rate. Accordingly, there would be no motivation to combine any of the other references with Ota for the encoding and decoding of speech packets at differing rates.

Furthermore, even if Ota were combined one or more of the other references, Ota fails to teach the decoding of speech packets at a rate exceeding the speech encoding rate, and therefore the combination cannot result in Applicant's claimed invention. Applicant further submits that Ota's teachings are limited to video data because these teaching specifically address issues related to picture displaying and are not applicable to voice transmission over a wireless medium.

Discussion on Rabenko

Rabenko has been cited by the Examiner in reference to claim 1 for disclosing the receipt of speech packets at a rate exceeding the speech encoding rate. Applicant respectfully disagrees with this interpretation of Rabenko. Rabenko either increases or decreases a transmission rate of a data pump transmitter depending on the state of a jitter buffer (see Rabenko paragraph 0555). When the jitter buffer is above a predetermined level, the rate is increased, and when the jitter buffer is below a predetermined level, the rate decreased. If Rabenko's teachings were applied to speech packets transmitted through a wireless channel, speech packets sometimes would be sent through the channel at a rate below the speech encoding rate (i.e., when the jitter buffer is below the predetermined level). If the transmission rate is lower than the speech encoding rate, a delay results which may be unacceptable for voice communications. The transmission of speech

packets at a rate lower than the speech encoding rate ***teaches away*** from Applicant's claim 1 which recites that the transmission rate exceeds the speech encoding rate.

Rabenko has also been cited by the Examiner in reference to claim 8 for disclosing the transmission of speech packets through a wireless communication medium. Applicant's claims 1 and 8, however, are concerned with the transmission of speech packets through a wireless medium having a non-dedicated wireless communication channel. The bandwidth is not dedicated to a particular communication device. Because the bandwidth is shared, users contend for channel access. Applicant's claim 1 is directed to compensating for the channel access delay. In Rabenko, on the other hand, there is no channel access delay because channels are dedicated communication channels and/or managed centrally. Each type of wireless communication network listed in paragraph 0114 of Rabenko provides for a dedicated communication channel when voice is communicated. For example, digital cellular uses dedicated/preallocated channels. GSM, TDMA, and CDMA networks assign dedicated channels/bandwidth to each mobile device.

In view of the above, Applicant submits that Rabenko does not disclose any of the elements of Applicant's claim 1 or 8. Applicant further submits that because Rabenko is not presented with the problem of channel access delay, there would be no motivation to combine Rabenko with any of the other references.

Discussion of Jacobs

Jacobs has been cited by the Examiner in reference to claim 4 for disclosing a dynamic time warping (DTW) process to generate speech signals representative of the initial portion of speech packets, the speech signals spanning a shorter time duration than the initial portion of speech packets and having substantially preserved pitch attributes of the initial portion of speech packets. Applicant respectfully disagrees with this interpretation of Jacobs and submits that the DTW process disclosed by Jacobs is used for voice recognition, not pitch preservation (see Jacobs column 4, lines 16 – 31). The DTW of Jacobs is applied to pattern matching techniques (to match two voice patterns). There is no teaching, suggestion or motivation in Jacobs to apply a DTW process to preserve pitch attributes when speech signals are generated at rate exceeding the speech encoding rate. In Applicant's claim 4, for example, a dynamic time warping process is

used to generate the speech signals to compensate for the increased pitch which may result from generating speech signals at a faster rate. Accordingly, Applicant submits that combining Jacobs with any of the other cited references does not result in Applicant's claim 4.

Discussion on Hippelainen

Hippelainen has been cited by the Examiner for buffering of speech packets for the channel reallocation delay until a channel for transmission is granted. Applicant submits that Hippelainen only discloses the allocation and deallocation of channels for data transmission and the buffering of packets to be sent. There is no teaching or suggestion in Hippelainen that there is any delay associated with allocation of a channel for which packets are buffered. In Hippelainen, the packets are buffered, not because of a channel allocation delay, but so that they can be received in the proper order. The channel is allocated prior to the buffering (i.e., the channel is allocated advance). This is emphasized by Hippelainen's use of a control signal that is used to notify the receiver of the packets waiting for transmission (see Hippelainen column 2, lines 42 – 61). The packets are buffered while the transmitter and receive exchange the control signal over the channel. The control signal is used by Hippelainen to help ensure that packets are received in the correct order. The packets are not buffered during a channel reallocation delay because the channel is already allocated. The pre-allocation of channels is further emphasized in Hippelainen (see column 3, lines 6 – 16). In view of the above, Applicant submits that combining Hippelainen with the cited reference does not result in Applicant's claimed invention.

In view of the above, Applicant submits that the combination of the cited references does not result in Applicant's claimed invention as recited in claims 1 – 10 because none of the cited art teach, suggest or motivate, among other things, the generation of speech signals at a varying rate to compensate for channel access delay, as recited in claim 1.

As discussed above, Applicant further submits that there is no motivation to combine Rabenko with any of the other references because Rabenko is not presented with a channel access delay. Furthermore, as discussed above, Applicant submits that Rabenko teaches away from Applicant's claims because the application of Rabenko to Applicant's claims would result in the transmission of speech packets at a rate lower than the speech encoding rate.

As also discussed above, Applicant further submits that there is no motivation to combine Fallon with any of the other references because Fallon is not applicable to speech signals.

As also discussed above, Applicant further submits that there is no motivation to combine Ota with any of the other references because Ota *teaches away* from Applicant's claims by teaching that differing encoding and decoding rates are undesirable.

Claims 11, 20, 23 and 24 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota. Claims 12, 14, 15 and 17 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota, and further in view of Rabenko and Auld. Claims 13, 18 and 19 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota, and further in view of Hippelainen. Claim 16 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota, and further in view of Jacobs. Claims 21 and 22 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota, and further in view of Rabenko. Claim 25 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota, and further in view of Rinne (U.S. 2005/0207388). Claim 26 was also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota and Rinne, and further in view of Rabenko and Auld. Claims 27 and 28 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Fallon in view of Ota, Rinne, Rabenko and Auld, and further in view of Jacobs. Applicant's claim 11 emphasizes this by reciting a decoder to decode speech packets and a processing element to generate speech signals at a varying rate.

Applicant's claims 11 – 22 are directed to a wireless communication device for communicating packet-switched voice communications. The wireless communication device includes a voice decoder to decode speech packets in which at least an initial portion of the speech packets are delayed by a channel reallocation delay. The wireless communication device also includes a buffer to store the decoded speech packets. The wireless communication device also includes a processing element to generate speech signals from the decoded speech packets at a varying rate initially exceeding a speech encoding rate to compensate at least in part for the channel reallocation delay. As recited in claim 11, the speech signals are representative of the

initial portion of the speech packets and have a shortened time period. As further recited in claim 11, the processing element decreases the rate of generating the speech signals to approximately the speech encoding rate.

Applicant's claims 23 – 28 are directed to a system for communicating voice over a wireless communication channel. The system includes a voice encoder to encode outbound speech packets at a speech encoding rate, and an output buffer to store the encoded outbound speech packets until a wireless communication channel is allocated for the transmission of the encoded outbound speech packets. The system also includes a voice decoder, a decoder buffer and a processing element that operate similar to those elements recited in claim 11.

Applicant's claims 11 – 28 have similar recitations to claims 1 – 10. In view of the above discussion regarding claims 1 – 10, Applicant submits that claims 11 – 28 are also allowable over the cited references.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Greg Gorrie at (480) 659-3314, or Applicant's below-named representative to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Chris Hammond Chris Hammond

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